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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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10/748,425

12/30/2003

Donald A. Kerth

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10/13/2006

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EXAMINER

VO, NGUYEN THANH

ART UNIT

PAPER NUMBER

2618

DATE MAILED: 10/13/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/748,425

Applicant(s)

KERTH, DONALD A.

Examiner

Nguyen T. Vo

Art Unit

2618

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 01 August 2006.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-26 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1, 2 and 13-16 is/are rejected.
- 7) ☒ Claim(s) 3-12 and 17-26 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. _____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO/SB/08)
Paper No(s)/Mail Date _____
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____
- 5) ☐ Notice of Informal Patent Application
- 6) ☐ Other: _____

DETAILED ACTION

Election/Restrictions

1. Applicant's election of Specie I, claims 1-26 in the reply filed on August 1st, 2006 is acknowledged. Because applicant did not distinctly and specifically point out the supposed errors in the restriction requirement, the election has been treated as an election without traverse (MPEP § 818.03(a)).

Claim Rejections - 35 USC § 103

2. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

3. Claims 1, 13-15 are rejected under 35 U.S.C. 103(a) as being unpatentable over Stikvoort (US 2004/0125240 A1, cited by examiner) in view of Kroeger (5,828,705, cited by examiner).

As to claims 1, 15, Stikvoort discloses in figure 1 a radio frequency (RF) receiver comprising a local oscillator (LO) 8 for generating a local oscillation signal; first and a second mixers (see the two mixers 5) coupled to said LO, for converting a received RF signal to an in-phase intermediate frequency (IF) signal and a quadrature IF signal, respectively (see the I and Q signals from mixers 5); an LO frequency control module 3, coupled to said LO, for alternately down-converting a channel frequency by changing an oscillation frequency of said LO; a down converter 13, coupled to said first and second mixers, for down converting said in-phase IF signal and said quadrature IF signal to a

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baseband; and a down conversion controller (see the control signal 7; see also paragraph [0016]), coupled to said down converter, for adjusting a complex sine wave within said down converter (see paragraph [0016]). Stikvoort thus discloses all the claimed limitations except a complex sinusoid signal IFLO coupled to the down converter for providing a complex sinusoid signal to the down converter as claimed. Kroeger discloses a receiver comprising a complex sinusoid signal IFLO 210 (see figure 2) coupled to a down converter 200 for providing a complex sinusoid signal to the down converter 200. Kroeger further discloses a down conversion controller 270 coupled to the complex sinusoid signal IFLO 210. See column 3 line 21 to column 4 line 4. Therefore, it would have been obvious to one of ordinary skill in the art at the time of the invention to provide the above teaching of Kroeger to Stikvoort, in order to minimize frequency offset error (as suggested by Kroeger at column 3 lines 35-39).

As to claim 13, Stikvoort discloses an IF filter 15.

As to claim 14, Stikvoort discloses an analog-to-digital converter (see paragraph [0017]).

4. Claims 2, 16 are rejected under 35 U.S.C. 103(a) as being unpatentable over Stikvoort in view of Kroeger as applied to claims 1 and 15 above and further in view of Fulghum (6,728,326, cited by examiner).

As to claims 2, 16, Stikvoort as modified by Kroeger fails to disclose down-converting a channel frequency on a frame-by-frame basis. Fulghum discloses down-converting a channel frequency on a frame-by-frame basis (see column 4 lines 30-52; figure 2 showing TDMA frames; figure 3A showing down-converting received signal at

mixer 302). Therefore, it would have been obvious to one of ordinary skill in the art at the time of the invention to provide the above teaching of Fulghum to Stikvoort, in order to synchronize the receiver with the slot timing of the transmitted signal in a TDMA system (as suggested by Fulghum at column 4 lines 48-51).

Allowable Subject Matter

5. Claims 3-12, 17-26 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

As to claims 3, 17, the applied references fail to disclose or render obvious the functions of the LO frequency control module as specified in the claims.

As to claim 8, the applied references fail to disclose or render obvious the functions of the LO frequency control module as specified in the claim.

Response to Arguments

6. Applicant's arguments with respect to claims 1-26 have been considered but are moot in view of the new ground(s) of rejection.

Conclusion

7. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within

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TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

8. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Nguyen T. Vo whose telephone number is (571) 272-7901. The examiner can normally be reached on Monday-Friday.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Edward Urban can be reached on (571)272-7899. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

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Nguyen Vo

Nguyen Vo

10-10-2006

**NGUYENT.VO
PRIMARY EXAMINER**